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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/750,162 | 12/29/2000 | Keuk-Sang Kwon | 3430-0164P | 6546 |

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EXAMINER

LANEAU, RONALD

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2674

DATE MAILED: 11/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/750,162

Applicant(s)

KWON ET AL. 

Examiner

Ronald Laneau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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DETAILED ACTION

1. Claims 1-5 are presented for Examination. The results of the examination are the followings.

Priority

2. Receipt is acknowledged of papers (paper # 2) submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a **single paragraph** on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The abstract of the disclosure is objected to because it is not limited to a single paragraph.
Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's Admitted Prior Art (AAPA) in view of Shin (6,307,531).

As per claim 1, Applicant disclose in the AAPA a quad type liquid crystal display device RGGB comprising a liquid crystal panel having gate and data lines which define sub-pixel regions, gate driving integrated circuits seen either on the left and the right side of the circuit, a plurality of data drive circuits 115c, 115d arranged on one side of the liquid crystal panel and in this case on the upper portion of the panel, each of the data drive integrated circuits having "m" (m is natural number) number of channels as claimed (see AAPA, figure 5). The pattern used in the AAPA is different from the $(3n-1)$ th used in the claimed invention due to the fact that the AAPA uses only three data drive ICs as opposed to four. Shin is cited to show that using more than three data drive ICs $(32_1, 32_2, 32_3, \dots, 32_n)$ in a liquid crystal display device is well known in the art as seen in figure 4. In order to have the $(3n-1)$ channels for each data drive ICs that are floating as claimed, one would have to utilize the data drive ICs taught by Shin into the AAPA because it would provide a liquid crystal display apparatus having D-ICs arranged in a single bank for that

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is adapted to respond to video data signal bank form while enlarging the effective display area thereof (see column 2, lines 17-21). Further, this kind of pattern (similar to $3n-1$) is often used in the liquid crystal display art as it can be evidenced by Kim (6,392,719) who teaches three different patterns for his LCD like $(3n-2)$ th, $(3n-1)$ th, $(3n)$ th (see abstract, column 3, lines 1-9).

As per claim 2, Applicant discloses in the AAPA a device wherein each of two sub-pixels correspond to red, a first green, a second green, and a blue color filters as claimed (see figure 5).

As per claim 3, the device disclosed in the AAPA is a device wherein m is 384 as claimed (see page 5, lines 1-2 of AAPA, figure 5).

As per claim 4, Applicant discloses in the AAPA only three data integrated circuits (see figure 5) but Shin is cited to teach a liquid crystal display having driving integrated circuits in a single bank and including first to n th D-ICs spatially arranged in the upper region of the liquid crystal panel (see column 3, lines 24-26).

It would have been obvious to one of ordinary skill in the art to utilize four data drive integrated circuits (D-ICs) as taught by Shin into the AAPA for the same reasons stated in claim 1.

As per claim 5, Applicant discloses in the AAPA a liquid crystal display panel having a plurality of drive integrated circuits for driving the panel, each having " m " (natural number) number of channels and " n " ($n < m$, natural number) number of floating channels see figure 5), a plurality of film for connecting the drive integrated circuits. Applicant does not disclose in the AAPA that each film having $(m-n)$ number of lines. This is again a pattern used for the number of lines in a film. The pattern used in the AAPA is different from the $(3n-1)$ th used in the claimed invention due to the fact that the AAPA uses only three data drive ICs as opposed to

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four. Shin is cited to show that using more than three data drive ICs ($32_1, 32_2, 32_3, \dots, 32_n$) in a liquid crystal display device is well known in the art as seen in figure 4. In order to have the (m-n) number of lines, one would have to utilize the data drive ICs taught by Shin into the AAPA for the same reasons stated in claim 1.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Song et al (US Pub. #: 2001/0019382) teach a liquid crystal display device having driving integrated circuits arranged in a single bank form.
- Song (US Pub. #: 2002/0075212) teaches a method of driving a liquid crystal display panel of a dot inversion system having liquid crystal cells arranged at intersections between a plurality of data lines and a plurality of gate lines in a matrix array.
- Tamanoi (US 5,489,867) teaches a display data driving integrated circuit.
- Oh et al (US 5,856,818) teach a timing control for liquid crystal display including odd data driver ICs and even data driver ICs, both group of ICs being arrayed serially on one part of the liquid crystal display panel.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Laneau whose telephone number is 703-305-3973. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 6:00 PM or via email: ronald.laneau@uspto.gov.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached at 703-305-4709.

10. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

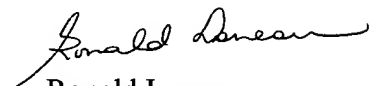
Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



Ronald Laneau
Examiner
Art Unit 2674

rl
October 23, 2002